

In the Specification

Please replace paragraph [0003] with the following:

[Background-Art]

Leather-like sheets consisting of ultra-fine fibers and an elastomer have excellent features unavailable in natural leather and are widely used in various applications. As a method generally employed for producing such a leather-like sheet, a fiber sheet is impregnated with an elastomer solution of a polyurethane or the like, and the impregnated fiber sheet is immersed in water or an organic solvent aqueous solution, to wet-coagulate the elastomer.

Please replace paragraph [0005] with the following:

Furthermore, in recent years, recyclability is respected for the purpose of protecting the environment, resources and the like, and in this connection, for example, polyester decomposing and recovering methods (for example, ~~patent document 1~~WO 01/30729) and polyurethane decomposing methods (for example, ~~patent document 2~~JP 2001-348457 A) are studied. However, these methods are mainly applied to a material consisting of a single component, and it is difficult to apply the methods to a composite material having fibers and an elastomer such as a polyurethane inseparably integrated as described above, since different decomposing methods are needed. So, separation into respective components is necessary, but in general the separation cost is high while perfect separation into respective components is also difficult.

Please replace paragraphs [0008] through [0012] with the following:

To solve these problems, it is an effective means to enhance the strength of the nonwoven fabric per se. Several means for enhancing the strength of the nonwoven fabric per se have been studied so far. For example, disclosed is a nonwoven fabric to be used as a leather-like sheet, consisting of fiber bundles and single fibers, obtained by using self-bonding fibers such as cellulose

fibers for forming self-bonded bundles, treating them by such a means as needle punching to form a sheet, and jetting a high speed fluid flow to the sheet, to entangle the bundles with each other, to entangle the bundles with the single fibers and to entangle the single fibers with each other (for example, ~~patent document 3JP 52-12902 A~~). However, if bundles are bonded by such a method, there arise such problems that when the nonwoven fabric is dyed, color irregularity occurs and that the surface appearance and hand become poor. There is also a further other problem that since the high speed fluid flow causes the considerable portions of the self-bonded ultra-fine fibers to be debonded and entangled, irregular debonding occurs due to irregular treatment, making the control of debonding difficult.

On the other hand, proposed are various methods in which needle punching is followed by hydro-entanglement to improve entanglement (for example, ~~patent documents 4 and 5JP 1-18178 B and JP 5-78986 A~~). These methods are respectively effective as a means for enhancing the entangling efficiency of hydro-entanglement. However, we the inventors found that even if needle punching and hydro-entanglement are merely combined, it is difficult to obtain a nonwoven fabric lowered in polyurethane content and still having satisfactory physical properties and quality maintained.

Furthermore, as a means different from the above-mentioned ones, it is disclosed that if polyester fibers with a low modulus and heat shrinkable polyester fibers are needle-punched, subsequently heat-treated and hot-pressed, a base sheet for a leather-like sheet having sufficient performance even without being impregnated with a polyurethane can be obtained (for example, ~~patent document 6JP 7-62301 B~~). However, we the inventors found that when the nonwoven fabric obtained like this was dyed, for example, using a jet dyeing machine, it was often broken by massaging and the like.

[~~Patent document 1~~] WO 01/30729

[~~Patent document 2~~] JP 2001-348457 A

[~~Patent document 3~~] JP 52-12902 A

[~~Patent document 4~~] JP 1-18178 B

[~~Patent document 5~~] JP 5-78986 A

[~~Patent document 6~~] JP 7-62301 B

[DisclosureSummary of the invention]

[Problems to be solved by the invention]

This invention provides particularly a nonwoven fabric containing ultra-fine fibers useful as a base sheet for a leather-like sheet and having a sufficient strength, and also a production method thereof. Furthermore, this invention provides a leather-like sheet having a sufficient quality, hand and physical properties and also excellent recyclability and yellowing resistance, even though it does not substantially contain any elastomer such as a polyurethane, and also provides a production method thereof.

[Means for solving the problems]

To solve the above-mentioned problems, this This invention has the following constitution. The nonwoven fabric containing ultra-fine fibers of this invention contains staple fibers with a fiber fineness of 0.0001 to 0.5 decitex and a fiber length of 10 cm or less, and has a weight per unit area of 100 to 550 g/m², an apparent density of 0.280 to 0.700 g/cm³, a tensile strength of 70 N/cm or more, and a tear strength of 3 to 50 N.

Please replace paragraph [0018] with the following:

[Effects of the invention]

This invention can provide a nonwoven fabric containing ultra-fine fibers with excellent strength properties, particularly suitable as a base sheet of a leather-like sheet. Furthermore, this invention can also provide a high quality leather-like sheet with the polyurethane content decreased greatly or without using any polyurethane at all.

Please replace paragraph [0020] with the following:

[The Best Modes for Carrying Out the Invention}Detailed Description

The nonwoven fabric containing ultra-fine fibers of this invention contain fibers with a fiber fineness of 0.0001 to 0.5 decitex. A preferable fiber fineness range is from 0.001 to 0.3 decitex, and a more preferable range is from 0.005 to 0.15 decitex. It is not preferable that the fiber fineness is less than 0.0001 decitex, since the strength would decline[[s]]. It is not preferable either that the fiber fineness is more than 0.5 decitex, since such problems would occur that the hand becomes hard, and that the entanglement is insufficient to make the surface appearance poor. Fibers with fineness outside said range can also be contained to such an extent that the effects of the invention are not impaired.